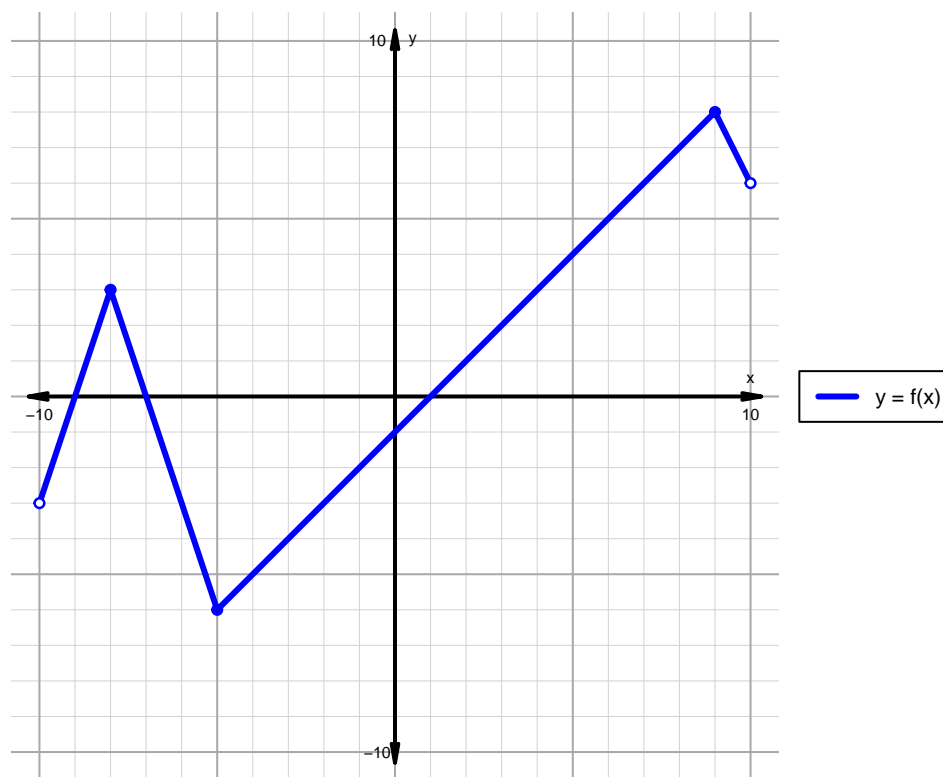


Name: \_\_\_\_\_

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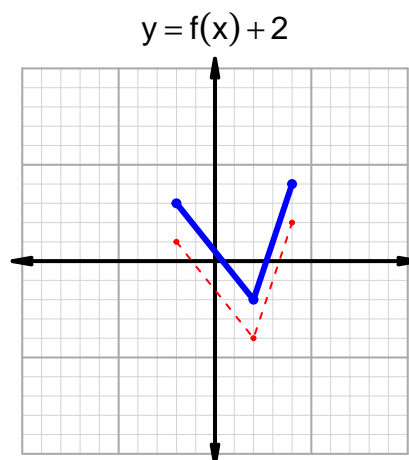
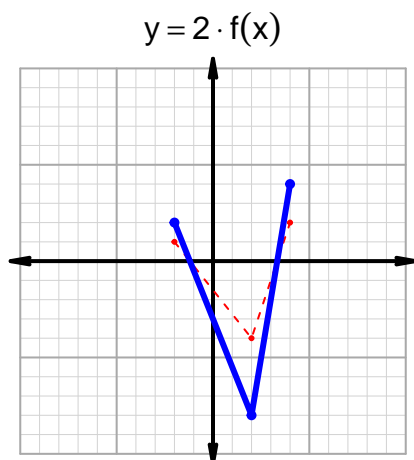
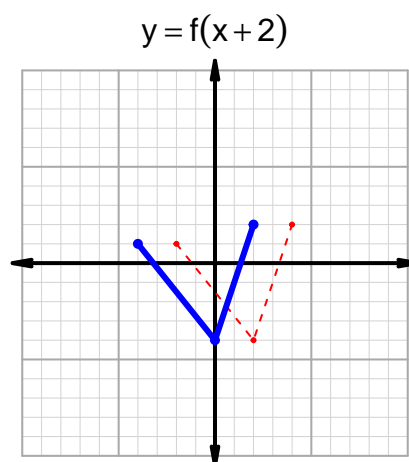
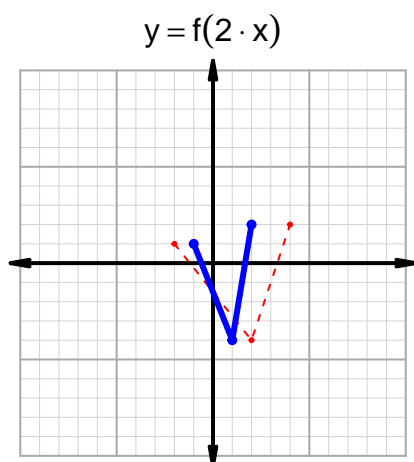
**Intervals, Transformations, and Slope Solution (version 60)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-9, -7) \cup (1, 10)$
Negative	$(-10, -9) \cup (-7, 1)$
Increasing	$(-10, -8) \cup (-5, 9)$
Decreasing	$(-8, -5) \cup (9, 10)$
Domain	$(-10, 10)$
Range	$(-6, 8)$

## Intervals, Transformations, and Slope Solution (version 60)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 31$  and  $x_2 = 67$ . Express your answer as a reduced fraction.

$x$	$g(x)$
31	85
67	77
77	31
85	67

$$\frac{g(67) - g(31)}{67 - 31} = \frac{77 - 85}{67 - 31} = \frac{-8}{36}$$

The greatest common factor of -8 and 36 is 4. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-2}{9}$$